OR 7398
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

May 29, 2000

ORD 00922 7398

FILE COPY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. George Sylvester
Van Waters & Rogers Inc.
32131 Steven Way
Conifer, Co 80433

Re: Draft Amendment to the Administrative Order on Consent
Van Waters & Rogers Inc., Portland, Oregon
EPA ID No. ORD. 00922 7398
RCRA Docket No. 1087-10-18-3008

Dear Mr. Sylvester:

The purpose of this letter is to provide Van Waters & Rogers Inc. (VW&R) with an early opportunity to review a draft amendment to the existing Administrative Order on Consent (AOC), dated June 15, 1988. As we have previously discussed, this modification is necessary to continue Resource Conservation and Recovery Act (RCRA) corrective action at VW&R facility in Portland, Oregon. Recently, VW&R has made significant progress in moving the cleanup process forward; however, to address the existing contamination at your site, additional work is required, specifically design and implementation of a final remedy that will contain, treat and/or dispose of contaminants.

Pursuant to Section R (page 44), of the June 1988 AOC Effective Date and Subsequent Modification, the existing order may be amended by mutual agreement of U.S. Environmental Protection Agency (EPA) and VW&R. With this letter, EPA initiates negotiations between VW&R and EPA to modify the existing AOC. This transmittal includes 5 enclosures. They are as follows:

Enclosure (1) Amendment to the existing AOC;
Enclosure (2) Attachment A - Scope of Work for Corrective Measure Implementation (CMI);
Enclosure (3) Attachment B - Acknowledgment of Termination and Agreement to Record Preservation and Reservation of Rights;
Enclosure (4) Attachment C - Quality Assurance and,
Enclosure (5) Attachment D - Data Management.

Please review all of the enclosures and provide comments to EPA no later than July 5, 2000. Your prompt review will give both parties ample time to resolve any potential issues that may be identified during the review process. Please note, the shaded areas highlight the language already slated for modification as appropriate, based on the information to be provided in the final CMS Report.

The current schedule for the Corrective Measure Study (CMS) forecasts the CMS Report to be completed in early summer of 2000. This means EPA may be ready to select final remedy as early as fall of 2000. Therefore, in the interest of maintaining the project's current momentum, it would be beneficial for both parties to reach a mutual agreement on the language of the Amendment to the existing AOC.

EPA appreciates VW&R's cooperation in this matter. We look forward to working with you on finalizing the language of the Amendment to the June 1988 AOC and implementation of the final remedy. Should you have questions regarding this correspondence, please do not hesitate to call me at 206/553-5122.

Sincerely,

Anna I. Filutowski
Project Manager

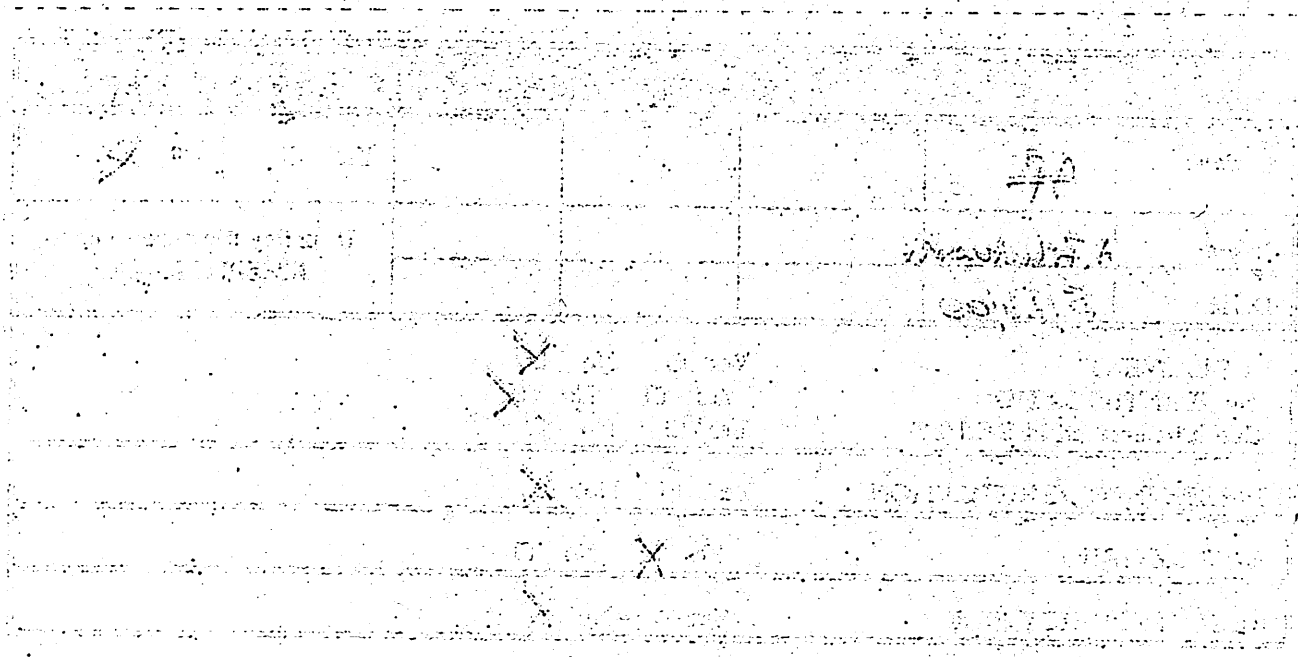
cc: Jim Hooper, VW&R
Dan Balbiani, IT Corporation

CONCURRENCES					POLICY FILE	
Initials:	AF				Yes ☐	No ☒
Name:	A. Filutowski				If policy file please bcc to RMSPU Manager	
Date:	5/23/00					

RCRIS EVENT	Yes ☐	No ☒
SNC IDENTIFICATION	Yes ☐	No ☒
(Can it be entered in RCRIS?)	Yes ☐	No ☐
SBREFA INFO VERIFICATION	Yes ☐	No ☒
PEER REVIEW	Yes ☒	No ☐
REGION 9 POLICY FILE	Yes ☐	No ☒

05-22-00 3008(h)Amendment Transmittal Letter.wpd:AnnaFilutowski/ik

BCC: Rene Fuentes, EPA-OEA
Bob Hartman, EPA-ORC
Anna Filutowski, EPA-RCU (3 copies)



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON

IN THE MATTER OF: VAN WATERS AND ROGERS INC. Portland, Oregon U.S. EPA ID No. ORD009227398, Respondent Proceedings under § 3008 (h) of the Resource Conservation and Recovery Act, 42 U.S.C. § 6928 (h)	RCRA Docket No. 1087-10-18-3008 (h) AMENDMENT TO ADMINISTRATIVE ORDER ON CONSENT

1. On June 15, 1988, the U.S. Environmental Protection Agency ("EPA") issued Administrative Order on Consent No. 1087-10-18-3008 (h) (Order). The Order directed that Respondent Van Waters and Rogers, Inc. (the "Company") perform Facility Investigation and Corrective Measures Study pursuant to Section 3008 (h) of the Resource Conservation and Recovery Act ("RCRA"), as amended, 42 U.S.C. § 6928 (h). The Order did not include any provisions requiring that the Company implement the final corrective action. The purpose of this Amendment is to incorporate into the Order provisions to implement the final corrective measurers selected by EPA.

2. EPA acknowledges that the Company has completed some of the tasks required by this Amendment. EPA further acknowledges that the Company has available some of the information and data required by this Amendment. This prior work and information may be used by the Company to meet the requirements of this Amendment, upon submission and approval by EPA.

3. Pursuant to paragraph 57 of the Order, the following provisions are incorporated into the Order;

A. Within thirty (30) days of the date of final execution of this Amendment, Respondent shall submit to EPA a Corrective Measures Implementation Work Plan ("CMI Work Plan"). The CMI Work Plan is subject to approval by EPA and shall be developed in a manner consistent with the CMI Scope of Work incorporated herein and contained in Attachment A.

B. The CMI Work Plan shall be designed to facilitate the design, construction, operation, maintenance, and monitoring of the selected corrective measures identified in the Final Decision document dated XXXXXX. In accordance with Attachment A, the CMI Work Plan shall include a schedule for conducting the activities identified in Tasks 2 and 3 of the Scope Work.

C. EPA shall use its best efforts to review expeditiously the CMI Work Plan and notify Respondent, in writing, of EPA's approval/disapproval, or modification in accordance with Paragraphs 21 and 22 of the Order. EPA shall make every reasonable effort to submit written comments within thirty (30) days following receipt of the Plan. Section R of the Order, regarding "Delay in Performance/Stipulated Penalties" specifically applies to all compliance dates and schedules identified in the CMI Work Plan.

D. In conjunction with the submittal of the CMI Workplan, Respondent shall submit to EPA a corrective action cost estimate which shall provide a written estimate of the cost, in current dollars, of completion of all CMI activities. The cost estimate must be based on the costs of hiring an independent third party to perform all CMI activities required by this Amendment. Respondent shall adjust the corrective action cost estimate within 60 day after Respondent becomes aware of new information which may affect the cost of satisfactory completion of corrective action activities required by this Amendment. Respondent shall submit the revised cost estimate to EPA within fifteen (15) day after preparation of the revision. Within (90) days after the effective of this Amendment, Respondent shall establish and shall continuously maintain financial assurance for performance of corrective action at the facility in at least the amount of the latest cost estimate. The mechanism(s) for obtaining and demonstrating financial assurance for corrective action must be one of the forms specified in paragraph

(a) through (f) of 40 C.F.R. § 265.143. Respondent shall submit documentation of such financial assurance to EPA within fifteen (15) days after establishment of the financial assurance.

4. Paragraph 61 of the Order is deleted in its entirety. The provisions of the Order, as modified by this Amendment, shall be deemed satisfied upon the Company's and EPA's execution of an "Acknowledgment of Termination and Agreement to Record Preservation and Reservation of Rights" (Acknowledgment"). The Acknowledgment, a form of which is attached as Attachment B, will specify that the Company has demonstrated to EPA's satisfaction that the Company Order, as amended, has been satisfactorily completed. This Acknowledgment shall not, however, terminate the Company's duty to comply with any continuing obligations including, but not limited to, Sections L ("RESERVATION OF RIGHTS") and N ("OTHER APPLICABLE LAWS").

5. Except as noted above, the Company and EPA expressly agree that all other provisions in the Order shall remain in full force and effect.

By their signatures below, the undersigned represent that they are authorized to enter into the terms and conditions of this Amendment.

IT IS SO AGREED.

By:_____ _____

FOR VAN WATERS AND ROGERS INC. DATE

By:_____ _____

RICHARD A. ALBRIGHT, DIRECTOR DATE

Office of Waste and Chemicals Management, Region 10

U.S. Environmental Protection Agency

ATTACHMENT A

SCOPE FOR WORK
FOR THE CORRECTIVE MEASURE(s) IMPLEMENTATION

PURPOSE

The purpose of this Corrective Measure Implementation (CMI) program is to design, construct, operate, maintain, and monitor the performance of the corrective measures selected to protect human health and the environment.

Certain elements of the interim corrective measures implemented by the Company at the facility have been selected by EPA as final corrective measures. Implementation of the interim corrective measures included preparing design plans, operation and maintenance plans, and construction quality assurance plans. Some of these plans will also be included as part of the final corrective measures. Therefore, certain tasks and/or elements in this scope of work may be duplicated and could be abbreviated or included by reference. In addition, necessary elements of the plans can be combined in one document provided the elements are clearly distinguished.

SCOPE

The Corrective Measure Implementation program consists of the following four tasks:

Task 1. Corrective Measure Implementation Work Plan

- A. Program Management Plan
- B. Community Relations Plan

Task 2. Corrective Measure Design

- A. Design Plans and Specifications
- B. Operation and Maintenance Plan
- C. Cost Estimate
- D. Project Schedule
- E. Construction Quality Assurance Objectives
- F. Health and Safety Plan
- G. Design Phases
- H. Data Collection Quality Assurance
- I. Data Management

Task 3. Corrective Measure Construction

- A. Responsibility and Authority
- B. Construction Quality Assurance Personnel Qualifications
- C. Inspection Activities

D. Sampling Requirements
E. Documentation

Task 4. Reports

A. Progress
B. Draft
C. Final

TASK 1: CORRECTIVE MEASURE IMPLEMENTATION WORK PLAN

The Company shall prepare a Corrective Measure Implementation Work Plan. The Work Plan will describe the CMI process including the development and implementation of several plans, which require concurrent preparation. It may be necessary to revise plans as the work is performed to focus efforts on a particular problem. The CMI Work Plan includes the following:

A. Program Management Plan:

The Program Management Plan will document the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of corrective measure (s). The plan shall document the responsibility and authority of the Company's representatives, consultants, contractors and their subcontractors involved with the implementation. The Program Management Plan will also include a description of qualifications of key personnel directing the Corrective Measure Implementation, including contractor personnel. Finally, the Program Management Plan will set forth a schedule for conducting Task 2 and Task 3 activities hereunder.

B. Community Relations Plan:

The Company shall revise the community Relations Plan to include any changes in the level of concern of information needs to the community during design and construction activities.

1. Specific activities which should be conducted during the design stage are the following:

   a. Revise the facility Community Relations Plan to reflect knowledge of citizen concerns and involvement at this stage of the process; and,

   b. Prepare and distribute a public notice and an updated fact sheet at the completion of engineering design.

2. Specific activities to be conducted during the construction stage could be the following: Depending on citizen interest at a facility at this point in the corrective action process, community relations activities could range from group meetings to fact sheets on the technical status.

TASK 2: CORRECTIVE MEASURE DESIGN

The Company shall prepare final construction plans and specifications to implement the corrective measures at the facility as defined in the Final Decision document dated XXXXXX The Company can, where appropriate, reference documents previously submitted to EPA. The required elements include the following:

A. Design Plans and Specifications

The Company shall develop clear and comprehensive design plans and specifications which may include, as appropriate, the following:

1. Discussion of the design strategy and the design basics, including;

   a. Compliance with all applicable environmental and public health standards; and,
   b. Minimization of environmental and public impacts.

2. Discussion of the technical factors of importance including:

   a. Use of currently accepted environmental control measures and technology;
   b. The constructability of the design; and
   c. Use of currently acceptable construction practices and techniques.

3. Description of assumptions made and detailed justification of these assumptions;

4. Discussion of the possible sources of error and references to possible operation and maintenance problems;

5. Detailed drawings of the proposed design;

6. Tables listing equipment and specifications;

7. Appendices including;

   a. Sample calculations (one example presented and explained clearly for significance or unique design calculations); and,
   b. Results of laboratory or field test.

B. Operation and Maintenance Plan

The Company shall prepare an Operation and Maintenance (O&M) Plan to cover both implementation and long-term maintenance of the corrective measure. The Plan can reference documents previously submitted to EPA. The Plan shall be composed of the following elements as appropriate:

1. Description of normal operation and maintenance;

    a. Description of tasks for operation;
    b. Description of tasks for maintenance;
    c. Description of prescribed treatment or operation conditions; and
    d. Schedule showing frequency of each O&M task.

2. Description of potential operating problems;

    a. Description and analysis of potential operation problems;
    b. Source of information regarding problems; and,
    c. Common and/or anticipated remedies.

3. Description of routine monitoring and laboratory testing;

    a. Description of monitoring tasks;
    b. Description of required laboratory tests and their interpretation;
    c. Required QA/QC; and
    d. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

4. Description of alternate operation and maintenance;

    a. Should systems fail, alternate procedures to prevent undue hazard; and
    b. Analysis of vulnerability and additional resource requirements should a failure occur.

5. Safety Plan;

    a. Description of precautions, or necessary equipment, etc., for site personnel; and
    b. Safety tasks required in event of systems failure.

6. Description of equipment; and

   a. Equipment identification;
   b. Installation of monitoring components;
   c. Maintenance of site equipment; and,
   d. Replacement schedule for equipment and installed components.

7. Records and reporting mechanisms required:

   a. Operating logs;
   b. Laboratory records;
   c. Mechanism for reporting emergencies;
   d. Personnel and maintenance record; and,
   e. Monthly/annual reports to regulatory agencies

C. Cost Estimate

The Company shall develop cost estimates for the purpose for assuring that the Facility has the financial resources necessary to construct and implement the corrective measures. The cost estimate developed in the CMS shall be refined to reflect the more detailed/accurate design plans and specification being developed. The cost estimate shall include both capital and operation and maintenance costs. A Cost Estimate shall be submitted simultaneously with the Final Design Document.

D. Project Schedule

The Company shall develop a Project Schedule for construction and implementation of the corrective measures which identifies timing for initiation and completion of all critical path tasks. The Company shall specifically identify dates for completion of the project and major interim milestones. An Initial Project Schedule shall be submitted simultaneously with the Prefinal Design Document submission, if any, and the final Project Schedule with the Final Design Document.

E. Construction Quality Assurance Objectives

The Company shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to, the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements; and documentation.

F. Health and Safety Plan

The Company shall modify the health and Safety Plan developed for the RCRA Facility Investigation to address the activities to be performed at the facility to implement the corrective measure (s).

G. Design Phases

The Company's design of the corrective measures that have not already been implemented as part of the interim corrective measures should include the phases outlined below:

1. Preliminary Design

The Company shall submit the preliminary design when the design effort is approximately 30 percent complete. At this stage, the Company shall have field verified the existing conditions of the Facility. The preliminary design shall reflect a level of effort such that the technical requirements for the project have been addressed and outlined so that they may be reviewed to determine if the final design will provide operable and usable corrective measure (s). Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Company shall include with the preliminary submission, design calculations reflecting the same percentage of completion as the designs they support.

2. Correlating Plans and Specifications

General correlation between drawings and technical specifications, is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the Company shall:

a. Coordinate and cross-check the specifications and drawings; and
b. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

These activities shall be completed prior to the 95 percent Prefinal submittal to EPA, if any, otherwise prior to the final design submittal.

3. Equipment Start-up and Operator Training

The Company shall prepare, and include in the technical specifications governing treatment system, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installations, adjustment, start-up, and operation of the treatment systems, and training covering appropriate operations procedures once the start-up has been successfully accomplished.

4. Additional Studies

If EPA determines that Corrective Measure Implementation requires additional studies to supplement the available technical data, the Company shall propose the scope and method for performance of any such study in the CMI Work Plan, as well as a schedule

for conducting the study, reporting the results and incorporating the results into the corrective measure design.

5. Prefinal and Final Design

The Company shall submit the prefinal/final design documents in two parts, if appropriate given the complexity of the selected remedy (otherwise only the final design must be submitted for approval). The first submission shall be at 95 percent completion for design (i.e., prefinal). After approval of the prefinal submission, the Company shall execute the required revisions and submit the final documents 100 percent complete with reproducible drawings and specifications.

The prefinal design submittal shall consist of the Design Plans and Specifications, Operation and Maintenance Plan, Project Schedule, and Construction Quality Assurance Program Plan.

The final design submittal shall consist of the Final Design Plans and Specifications (100 percent complete), the Company's Final Construction Cost Estimate, the final Operation and Maintenance Plan, Final Construction Quality Assurance Program Plan, and Final Project Schedule. The quality of the design documents should be such that the Company would be able to include them in a bid package and invite contractors to submit bids for the construction project.

H. Data Collection Quality Assurance

The Company shall develop a Quality Assurance Project Plan (QAPP), the primary purpose of which shall be to assist in planning for the collection and analysis of environmental samples in support of the Order and in explaining data anomalities. The QAPP shall be developed in a manner consistent with Attachment C.

I. Data Management

The Company shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and establish data documentation materials and procedures and documents. The plan shall also provide the format to be used to present raw data and conclusions of the investigation. The Company shall prepare the plan in a manner consistent with documentation and information guidelines delineated in Attachment D.

TASK 3: CORRECTIVE MEASURE CONSTRUCTION

Following EPA approval of the final design for those elements that were not implemented as part of the interim corrective measures, the Company shall develop and implement a construction quality assurance (CQA) program to ensure, with a reasonable degree of certainty, that the completed corrective measure(s) meets or exceeds all design criteria, plans, and specifications.

The CQA plan is a facility specific document which must be submitted to EPA for approval prior to the start of construction. At a minimum, the CQA plan should include the elements summarized below., Upon EPA approval of the CQA plan, the Company shall construct and implement the corrective measure(s) in accordance with the approved design, schedule, and the CQA plan. The company shall also implement the elements of the approved Operation and Maintenance plan.

A. Responsibility and Authority

The responsibility and authority of all organizations (e.g., technical consultants, construction firms, etc.) and key personnel involved in the construction of the corrective measure(s) shall be described fully in the CQA plan. The Company must identify a CQA officer and the necessary supporting inspection staff.

B. Construction Quality Assurance Personnel Qualifications

The qualifications of the CQA officer and supporting inspection personnel shall be presented in the CQA plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the corrective measure(s) shall be summarized in the CQA plan. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all environmental requirements. The inspection should also verify compliance with all health and safety procedures.

D. Sampling Requirements

The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems as addressed in the project specifications should be presented in the CQA plan.

E. Documentation

Reporting requirements for CQA activities shall be described in detail in the CQA plan. This should include such items as summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records also should be presented in the CQA plan.

TASK 4: REPORTS

The Company shall prepare plans, specifications, and reports as set forth in Tasks 1 through 3 to document the design, construction, operation, maintenance, and monitoring of the corrective measure. As noted above, the Company can reference documents previously submitted to EPA. The documentation shall include, but not be limited to, the following:

A. Progress

The Company shall provide EPA with periodic progress reports during the design and construction phases on the submittal schedule approved by EPA. The progress reports shall contain:

1. A description and estimate of the percentage of the CMI completed and description of key events for the reporting period;

2. Summaries of all findings including tables and graphs summarizing the mass of contaminants removed over entire time that the systems are operating;

3. Summaries of all changes in the CMI during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in personnel during the reporting period;

8. Projected work for the next reporting period; and

9. Copies of inspection reports, laboratory/monitoring data, etc.

B. Draft

1. The Company shall submit a draft Corrective Measure Implementation Work Plan as outlined in Task 1.

2. The Company shall submit draft Construction Plans and Specifications, Design Reports, Schedules, Operation and Maintenance plans, and Study Reports as outlined in Task 2.

3. The Company shall submit a draft Construction Quality Assurance Program Plan and Documentation as outlined in Task 2.

C. Final

The company shall submit final versions of the Corrective Measure Implementation Work Plan, Construction Plans and Specifications, Design Reports, Cost estimate, Project Schedule, Operation and Maintenance Plan, Study Reports, Construction Quality Assurance Program Plan/Documentation, and the Corrective Measure Implementation Report, addressing comments from EPA on draft submittals as provided for in paragraphs 21 and 22 of the Consent Order.

1. At the "completion" of the construction of the project, the Company shall submit a Corrective Measure Implementation Report to EPA. The Report shall document that the project is consistent with the design specifications, and that the corrective measure is performing adequately. The Report shall include, but not be limited to, the following elements:

   a. Synopsis of the corrective measure(s) and certification of the design and construction;

   b. Explanation of any modifications to the plans and why these were necessary for the project;

   c. Listing of the criteria, established before the corrective measure was initiated, for judging the functioning of the corrective measure and also explaining any modification to these criteria;

   d. Results of Facility monitoring, indicating that the corrective measure will meet or exceed the performance criteria; and

   e. Explanation of the operation and maintenance (including monitoring) to be undertaken at the facility.

This report should include all of the inspection summary reports, inspection data sheets, problem identification and corrective measure reports, photographic reporting data sheets, design engineers' acceptance reports, deviations from design and materials specification (with justifying documentation), and as-built drawings.

ATTACHMENT B

ACKNOWLEDGEMENT OF TERMINATION AND
AGREEMENT TO RECORD PRESERVATION AND RESERVATION OF RIGHTS

1. The United States Environmental Protection Agency (EPA) agrees and acknowledges that the Administrative Order on Consent, EPA Docket No. 1087-10-18-3008(h), issued by EPA on June 15, 1988 (the Consent Order), including any additional work required by EPA pursuant to the Consent Order, as amended, has been satisfactorily completed based upon the information presently available to EPA.

2. The Company agrees and acknowledges that it shall preserve, during the pendency of this Consent Order and for a minimum of six (6) years after its termination, all records and documents in its possession or in the possession of its divisions, employees, agents, consultants or contractors which have been compiled pursuant to the terms of this Consent Order. Prior to the conclusion of this six (6) year period VW&R shall furnish a copy of such records not previously provided to EPA for its inspection and/or retention.

   VW&R further agrees that it will require of any contractor, agent or consultant that it retains to carry out any terms of this Consent Order to either submit to VW&R or to maintain in their respective possession all records and documents within their respective possession which relate in any way to this Consent Order for a minimum of six (6) years after the termination of this Consent Order. All documents received by VW&R from its contractor, agent or consultant pursuant to the terms of this Consent Order shall be preserved by VW&R for a minimum of six (6) years from date of receipt or furnish to EPA for inspection and/or retention.

3. The Company agrees and acknowledges that the Company's completion of the work required by the Consent Order, as amended, does not limit or otherwise preclude EPA from taking additional enforcement action pursuant to the Solid Waste Disposal Act, also known as the Resource Conservation and Recovery Act, as amended (RCRA), 42 U.S.C. §6901 at seq., or other applicable authorities, should EPA determine such action is warranted.

Enclosure(3)

4. The Company agrees and acknowledges that the Company's completion of the work required by the Consent Order, as amended, does not relieve the Company of its obligations to comply with RCRA or all other applicable local, state, or Federal laws and regulations.

IT IS SO AGREED AND ACKNOWLEDGED:

Date: _____ By: _____
Van Waters & Rogers, Inc.

Date: _____ By: _____

Director
Office of Waste and Chemical Management
US EPA Region 10

Enclosure(3)

ATTACHMENT C

QUALITY ASSURANCE

1. The Company shall develop a Quality Assurance Project Plan (QAPP), the primary purpose of which shall be to assist in planning for the collection and analysis of environmental samples in support of the Order and in explaining data anomalies. In general, the QAPP shall consist of the following:

1.1 Throughout all sample collection and analysis activities, The Company shall use EPA approved quality assurance, quality control, and chain-of-custody procedures described in *EPA QA/R-5 EPA Requirements for Quality Assurance Project Plans, Interim Final, Nov. 1999.* The Company's QAPP shall be prepared in the format specified in *EPA QA/ R-5*. The following references may be helpful in preparing the QAPP and assessing the data collected for this Order:

EPA QA/G-4 Guidance for the Data Quality Objectives Process, EPA/600/R-96/055, September 1994.

EPA QA/G-5 Guidance on Quality Assurance Project Plans, EPA/600/R-98/018, February 1998.

EPA QA/G-6 Guidance for the Preparation of Operating Procedures for Quality-Related Operations, EPA/600/R-96/027, November 1995.

EPA QA/G-9 Guidance for the Data Quality Assessment Process: Practical Methods for Data Analysis, EPA/600/R-96/084, January 1998.

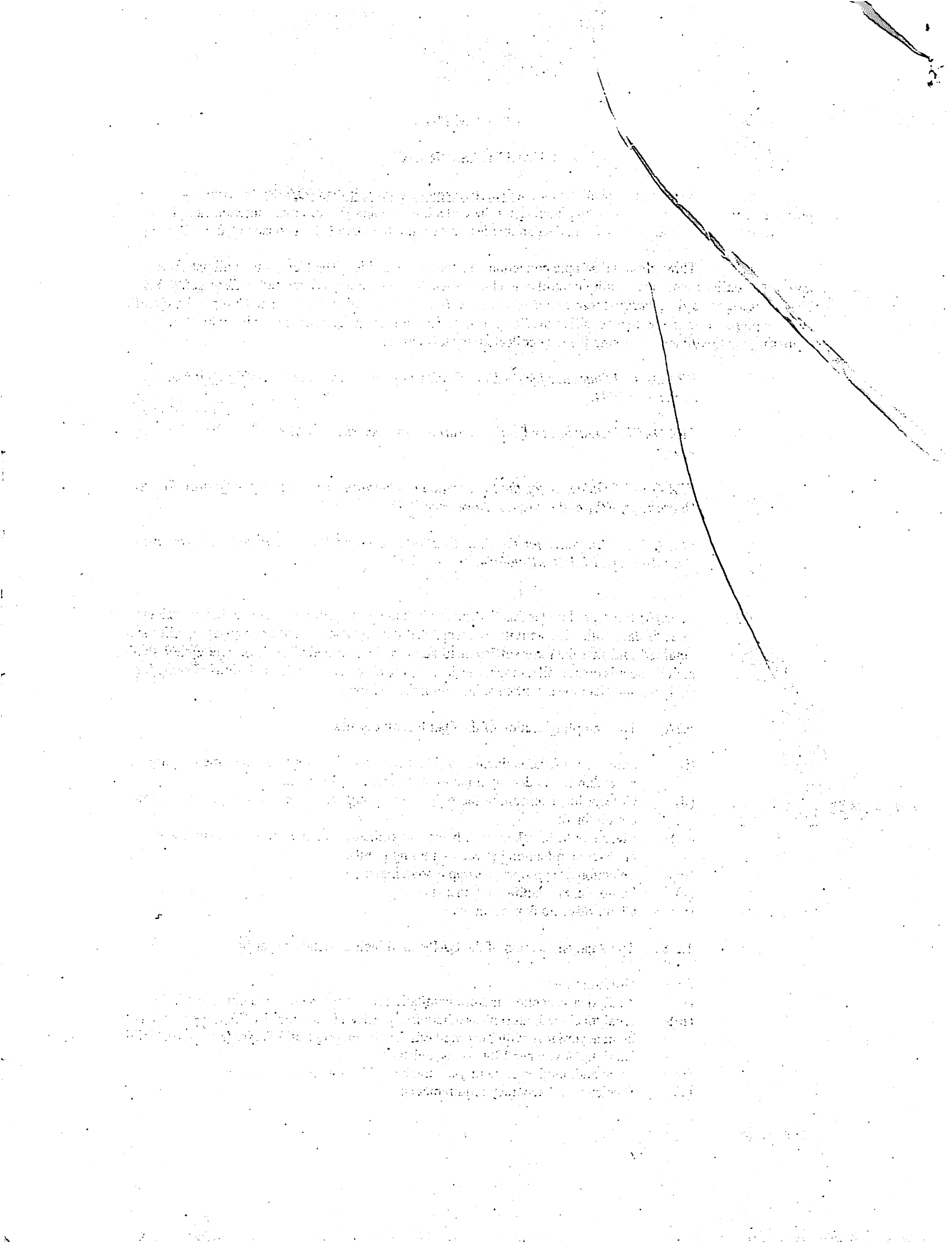
1.2 The QAPP required under this Order shall include data quality objectives that are relevant to each data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use (s). The QAPP shall include details on overall and specific data quality objectives, and descriptions of sampling, analyses and field measurements, including the following:

1.2A. The Sampling section of the QAPP shall discuss:

(i) Sampling methods including identification of sampling equipment, purging procedures, and decontamination procedures to be used;
(ii) Criteria for determining the type of sampling (e.g., composites, grabs, discrete, continuous);
(iii) Measures to be taken to prevent contamination of the sampling equipment and cross-contamination between sampling points;
(iv) Selection of appropriate sample containers;
(v) Sample preservation methods; and
(vi) Chain-of-custody procedures.

1.2.B. The Analysis section of the QAPP shall include details regarding:

(i) Holding times;
(ii) Analytical detection and/or quantitation limits for each target compound;
(iii) Analytical methods (unless otherwise approved in advance by EPA, methods shall be in accordance with Test Methods for Evaluating Solid Waste (SW-846), Third Edition, November 1986, or as updated);
(iv) Type and number of quality assurance field samples appropriate;
(v) Precision and accuracy requirements;



(vi) Sample shipment requirements;
(vii) Laboratory data delivery requirements; and
(viii) The collection and analysis or quality assurance samples for each sampling event, such as field duplicates and matrix spiked samples and analysis of transfer blanks to identify sample contamination.

1.2.C. The Field Measurement section of the QAPP shall discuss documentation of field measurement operations recording field data; calibration of field devices; collection of replicate measurements; potential interferences present; field equipment to be used; and decontamination procedures.

2. The Company shall submit its QAPP to EPA at least fourteen (14) days prior to the initial environmental sampling event. The Company shall take into consideration any comments EPA may provide on the QAPP, and shall respond in writing if EPA so requests. The Company shall amend the QAPP whenever there is a modification in the collection of samples, the analysis of samples, or whenever conditions or requirements of the QAPP change. The Company may utilize the same QAPP or parts thereof for all sampling events to which it is applicable. The Company shall submit addenda to the QAPP to expand its scope to include additional sampling events. The Company may incorporate the QAPP and any addenda into any Workplan or report by reference.

3. The conditions and requirements specified in the QAPP shall meet all requirements of the Order. The terms and conditions in the QAPP shall be implemented.

4. The names, addresses, and telephone numbers of analytical laboratories that The Company intends to use muse be specified in the QAPP.

5. The Company shall monitor and ensure that high quality work is performed by its consultant (s) and its laboratory and contract laboratories. EPA may reject any data that does not meet the requirements of the Order or the applicable QAPP. This rejection of data may require that The Company resample and reanalyze samples from the Facility.

6. A copy of the QAPP shall be retained at the Facility and shall be available to EPA upon request or inspection.

7. The director or manager of each laboratory providing measurement results in support of this Order and each QAPP must sign and submit to EPA with each submittal of laboratory-derived data, the following statement:

I certify these data are in compliance with all laboratory requirements of the QAPP for the Van Waters & Rogers Portland Oregon Facility dated_____.

Signature: _____ **Date:** _____

8. The Company shall obtain, or ensure its laboratories retain the following documentation for sample analyses from the laboratories which conduct sample analyses in support of this Order, and will provide such documentation to EPA upon request:

8.1 All sample tracking reports (i.e., the signed chain-of-custody forms and the signed packing lists);
8.2 Sample log-in forms;
8.3 Air or freight bills;
8.4 Documentation of the condition of custody seals;
8.5 Any telephone logs referring to the samples;

8.6 Case Narrative signed by the laboratory manager or his/her designee certifying the accuracy and validity of all data reported and describing any changes or problems encountered during the analyses along with documenting their resolution (s);

8.7 Tabulated sample results, with units, percent solids, and sample weights or volumes clearly specified;

8.8 Blank data with tabulated results. Specify which samples go with which blanks;

8.9 Surrogate spike analysis result summaries with calculated percent recovery values;

8.10 Matrix spike/duplicate (MS/D) result summaries with calculated percent recovery and relative percent difference values.

8.11 All data system printouts and manual worksheets;

8.12 Raw QA data including:

8.12.A. Blank data chronological order (tabulated results and blank data systems printouts); and,

8.12B. MS/D data in chronological order (tabulated results and MS/D data system prints):

8.13 Extraction, dilution and cleanup logs and percent moisture for all samples, blank, etc.;

8.14 Continuing calibration standards forms that include the lab name, lab code, job number, SDG number, calibration sources, concentration units, analyses, true values, found values and the calculated percent recovery;

8.15 The initial calibration curves, labeled with date and time of preparation; and,

8.16 Bench sheets for sample preparation and analysis of samples and standards indicating dates, times, methods of sample digestion/preparation and analysis, and volumes/amounts/concentrations of standard and reagents added, instrument run time/date, dilutions made, etc.; and preparation/weight logs for percent moisture determinations.

All bench sheets and logs are to be labeled with the date and bear the analyst's signature.

9. The Company shall archive sample data and project records in accordance with the requirements of Section I: Records Preservation of this Order, unless such data and records are retained by the laboratory as provided herein. If The Company's laboratory retains the required documentation in lieu of The Company, The Company shall verify at least annually that the required documentation can be retrieved from the laboratory upon The Company's request. For data collected prior to completion of the CMS, the required documentation must be retained for at least six years after publication of a Final Decision and Response to Comments. For data collected subsequent to the CMS, the retention period shall be in accordance with Section I.

10. The Company shall ensure that laboratories used by The Company for analyses of samples obtained pursuant to this Order participate in a quality assurance/quality control (QA/QC) program which is substantively equivalent to that required by EPA for its contract laboratories (EPA Contract Laboratory Program). EPA may conduct a performance and quality assurance Technical Systems Audit of the laboratories chosen by The Company before, during, or after sample analysis. The Company shall approve or disapprove the laboratory's QA/QC program after obtaining and reviewing the Laboratory's QA Plan and the Standard Operating (SOPs) which are used by the laboratory to measure samples from the Facility. The Company shall ensure that all Laboratory QA Plans and SOPs address all applicable requirements of the Order and the QAPP, and all elements specified in the following EPA document: *Guidance on Preparation of Laboratory Quality Assurance Plans*, U.S. EPA Region 10, EPA 910/9-92-032. Copies of the Laboratory QA Plan (s) and SOPs shall be made available to EPA upon request.

11. The Company shall ensure that the laboratories used to measure samples for the Order have the facilities, equipment, staff, and QA Program and QC procedures to perform sample measurements in support of the Order and the QAPP. This may require that The Company conduct an on-site Technical Systems

Audit (as specified in *EPA QA/G-7 Guidance on Technical Audits and Related Assessments for Environmental Data Operations, EPA/600/R-99/080, January 2000*) of the laboratories to make this determination.

12. As part of this Order and of The Company's QAPP, and upon request of EPA, The Company's laboratories shall perform analyses of Performance Evaluations (PE) samples provided by EPA to demonstrate the capability of the laboratory in meeting the data quality objectives as are specified in the approved Workplans and in the QAPP. EPA will attempt to coordinate provision of PE samples with regularly scheduled sampling events. The results of the measurement of these PE samples will be submitted to EPA upon request at no cost to EPA. EPA reserves the right to conduct at any time an on-site Technical Systems Audit, PE audit, or QA/QC audit of any laboratories chosen by The Company to measure samples from the Facility.

13. A data validation report shall be prepared for each sampling event conducted pursuant to the requirements of this Order. Per the specifications (regarding the proportion of data to be validated) and the schedule in the approved Workplan, The Company shall validate analytical data obtained, using *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA-540/R-94-012 (PB94-963501), February 1994* and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA-540/R-94-013 (PB94-963502), February 1994*. For organic or inorganic data analyzed by methods other than EPA CLP methods, or for data other than organic or inorganic covered in the *Functional Guidelines*, the validation shall follow the data validation format (headings) in the *Functional Guideline* documents, and using criteria established in either the method used for analysis or criteria established in the project specific QAPP. The data chosen for validation shall represent the entire range of values obtained. The data validation report shall be submitted to EPA in the periodic progress report following completion of data validation, or as required by the schedule in an EPA-approved Workplan.